

## SEQUENCE LISTING

<110> Luche, Ralf M.  
Wei, Bo

<120> DSP-5 DUAL-SPECIFICITY PHOSPHATASE

<130> 200125.413C1

<140> US

<141> 2003-08-19

<160> 22

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1106

<212> DNA

<213> Homo sapiens

<400> 1

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gtggggccgc	ggccgtcgcg	gagccagatc	acctgaggga	agcgggcatc	acggccgtgc	180
taacagtgga	ctcggaggag	cccagcttca	aggcggggcc	tggggtcgag	gatctatggc	240
gcctcttcgt	gccagcgctg	gacaaacccg	agacggacct	actcagccat	ctggaccggt	300
gcgtggcctt	catcggtcag	gcccgcgctg	agggccgtgc	ggtgttggtg	cactgtcatg	360
caggagtcag	tcgaagtgtg	gccataataa	ctgcttttct	catgaagact	gaccaacttc	420
cctttgaaaa	agcctatgaa	aagctccaga	ttctcaaacc	agaggctaag	atgaatgagg	480
ggtttgagtg	gcaactgaaa	ttataaccagg	caatgggata	cgaagtggat	acctctagtg	540
caatttataa	gcaatatcgt	ttacaaaagg	ttacagagaa	gtatccagaa	ttgcagaatt	600
tacctcaaga	actctttgct	gttgacccaa	ctaccgtttc	acaaggattg	aaagatgagg	660
ttctctacaa	gtgtagaaag	tgcaggcgat	cattatttcg	aagttctagt	attctggatc	720
accgtgaagg	aagtggacct	atagcctttg	cccacaagag	aatgacacca	tcttccatgc	780
ttaccacagg	gaggcaagct	caatgtacat	cttatttcat	tgaacctgta	cagtggatgg	840
aatctgcttt	gttgggagtg	atggatggac	agcttctttg	cccaaaatgc	agtgccaagt	900
tgggttcctt	caactggtat	ggtgaacagt	gctcttggtg	taggtggata	acacctgctt	960
ttcaaataca	taagaataga	gtggatgaaa	tgaaaatatt	gcctgttttg	ggatcacaaa	1020
caggaaaaat	atgaacatga	tattttatag	cttgggaaga	aacttgcaga	tgatatgtgc	1080
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<210> 2

<211> 1017

<212> DNA

<213> Homo sapiens

<400> 2

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gtggggccgc	ggccgtcgcg	gagccagatc	acctgaggga	agcgggcatc	acggccgtgc	180
taacagtgga	ctcggaggag	cccagcttca	aggcggggcc	tggggtcgag	gatctatggc	240

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gcctcttcgt gccagcgctg gacaaacccg agacggacct actcagccat ctggaccggt      300
gcgtggcctt catcggtcag gcccgcgctg agggccgtgc ggtgttggtg cactgtcatg      360
caggagtcag tcgaagtgtg gccataataa ctgcttttct catgaagact gaccaacttc      420
cctttgaaaa agcctatgaa aagctccaga ttctcaaacc agaggctaag atgaatgagg      480
ggtttgagtg gcaactgaaa ttataaccagg caatgggata cgaagtggat acctctagtg      540
caatttataa gcaatatcgt ttacaaaagg ttacagagaa gtatccagaa ttgcagaatt      600
tacctcaaga actctttgct gttgacccaa ctaccgtttc acaaggattg aaagatgagg      660
ttctctacaa gtgtagaaaag tgcaggcgat cattatttcg aagttctagt attctggatc      720
accgtgaagg aagtggacct atagcctttg cccacaagag aatgacacca tcttccatgc      780
ttaccacagg gaggcaagct caatgtacat cttatttcat tgaacctgta cagtggatgg      840
aatctgcttt gttgggagtg atggatggac aggtgagaac acattttatt ttctacaatt      900
ttattttatg atctatattt tattccttct tgcattttaa gctctatttt aactagtgtt      960
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<210> 3
<211> 340
<212> PRT
<213> Homo sapiens

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<400> 3
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 1          5          10          15
Ser Ala Ser Arg Val Ser Cys Ala Gly Gln Met Leu Glu Val Gln Pro
 20          25          30
Gly Leu Tyr Phe Gly Gly Ala Ala Val Ala Glu Pro Asp His Leu
 35          40          45
Arg Glu Ala Gly Ile Thr Ala Val Leu Thr Val Asp Ser Glu Glu Pro
 50          55          60
Ser Phe Lys Ala Gly Pro Gly Val Glu Asp Leu Trp Arg Leu Phe Val
 65          70          75          80
Pro Ala Leu Asp Lys Pro Glu Thr Asp Leu Leu Ser His Leu Asp Arg
 85          90          95
Cys Val Ala Phe Ile Gly Gln Ala Arg Ala Glu Gly Arg Ala Val Leu
100          105          110
Val His Cys His Ala Gly Val Ser Arg Ser Val Ala Ile Ile Thr Ala
115          120          125
Phe Leu Met Lys Thr Asp Gln Leu Pro Phe Glu Lys Ala Tyr Glu Lys
130          135          140
Leu Gln Ile Leu Lys Pro Glu Ala Lys Met Asn Glu Gly Phe Glu Trp
145          150          155          160
Gln Leu Lys Leu Tyr Gln Ala Met Gly Tyr Glu Val Asp Thr Ser Ser
165          170          175
Ala Ile Tyr Lys Gln Tyr Arg Leu Gln Lys Val Thr Glu Lys Tyr Pro
180          185          190
Glu Leu Gln Asn Leu Pro Gln Glu Leu Phe Ala Val Asp Pro Thr Thr
195          200          205
Val Ser Gln Gly Leu Lys Asp Glu Val Leu Tyr Lys Cys Arg Lys Cys
210          215          220
Arg Arg Ser Leu Phe Arg Ser Ser Ser Ile Leu Asp His Arg Glu Gly
225          230          235          240
Ser Gly Pro Ile Ala Phe Ala His Lys Arg Met Thr Pro Ser Ser Met
245          250          255
Leu Thr Thr Gly Arg Gln Ala Gln Cys Thr Ser Tyr Phe Ile Glu Pro
260          265          270

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Val Gln Trp Met Glu Ser Ala Leu Leu Gly Val Met Asp Gly Gln Leu  
                   275                                  280                                  285  
 Leu Cys Pro Lys Cys Ser Ala Lys Leu Gly Ser Phe Asn Trp Tyr Gly  
                   290                                  295                                  300  
 Glu Gln Cys Ser Cys Gly Arg Trp Ile Thr Pro Ala Phe Gln Ile His  
 305                                  310                                  315                                  320  
 Lys Asn Arg Val Asp Glu Met Lys Ile Leu Pro Val Leu Gly Ser Gln  
                                   325                                  330                                  335  
 Thr Gly Lys Ile  
                                   340

<210> 4  
 <211> 299  
 <212> PRT  
 <213> Homo sapiens

<400> 4  
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 Ser Ala Ser Arg Val Ser Cys Ala Gly Gln Met Leu Glu Val Gln Pro  
                   20                                  25                                  30  
 Gly Leu Tyr Phe Gly Gly Ala Ala Ala Val Ala Glu Pro Asp His Leu  
                   35                                  40                                  45  
 Arg Glu Ala Gly Ile Thr Ala Val Leu Thr Val Asp Ser Glu Glu Pro  
   50                                  55                                  60  
 Ser Phe Lys Ala Gly Pro Gly Val Glu Asp Leu Trp Arg Leu Phe Val  
 65                                  70                                  75                                  80  
 Pro Ala Leu Asp Lys Pro Glu Thr Asp Leu Leu Ser His Leu Asp Arg  
                                   85                                  90                                  95  
 Cys Val Ala Phe Ile Gly Gln Ala Arg Ala Glu Gly Arg Ala Val Leu  
                   100                                  105                                  110  
 Val His Cys His Ala Gly Val Ser Arg Ser Val Ala Ile Ile Thr Ala  
                   115                                  120                                  125  
 Phe Leu Met Lys Thr Asp Gln Leu Pro Phe Glu Lys Ala Tyr Glu Lys  
                   130                                  135                                  140  
 Leu Gln Ile Leu Lys Pro Glu Ala Lys Met Asn Glu Gly Phe Glu Trp  
 145                                  150                                  155                                  160  
 Gln Leu Lys Leu Tyr Gln Ala Met Gly Tyr Glu Val Asp Thr Ser Ser  
                                   165                                  170                                  175  
 Ala Ile Tyr Lys Gln Tyr Arg Leu Gln Lys Val Thr Glu Lys Tyr Pro  
                   180                                  185                                  190  
 Glu Leu Gln Asn Leu Pro Gln Glu Leu Phe Ala Val Asp Pro Thr Thr  
                   195                                  200                                  205  
 Val Ser Gln Gly Leu Lys Asp Glu Val Leu Tyr Lys Cys Arg Lys Cys  
                   210                                  215                                  220  
 Arg Arg Ser Leu Phe Arg Ser Ser Ser Ile Leu Asp His Arg Glu Gly  
 225                                  230                                  235                                  240  
 Ser Gly Pro Ile Ala Phe Ala His Lys Arg Met Thr Pro Ser Ser Met  
                   245                                  250                                  255  
 Leu Thr Thr Gly Arg Gln Ala Gln Cys Thr Ser Tyr Phe Ile Glu Pro  
                   260                                  265                                  270  
 Val Gln Trp Met Glu Ser Ala Leu Leu Gly Val Met Asp Gly Gln Val  
                   275                                  280                                  285  
 Arg Thr His Phe Ile Phe Tyr Asn Phe Ile Leu

290 295

<210> 5  
 <211> 14  
 <212> PRT  
 <213> Homo sapiens

<400> 5  
 Val His Cys His Ala Gly Val Ser Arg Ser Val Ala Ile Ile  
 1 5 10

<210> 6  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 6  
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 1 5 10 15  
 Asn Ile Leu Ala Tyr Leu Met  
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<210> 7  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 7  
 actcaaacc ctcattcatc ttagc 25

<210> 8  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 8  
 ccacacttcg actgactcct gc 22

<210> 9  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 9  
 caccgaaata caatcctggc tg 22

<210> 10  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 10  
 cagccaggat tgtatttcgg tg 22

<210> 11  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 11  
 aggattgtat ttcggtgggg c 21

<210> 12  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 12  
 tgaatgataa gaagcaaagg cagc 24

<210> 13  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 13  
 gtggcaactg aaattatacc aggc 24

<210> 14  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 14

gttaaaatag agcttaaaat gcaagaagg

29

<210> 15  
 <211> 170  
 <212> PRT  
 <213> Homo sapiens

<400> 15  
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 1 5 10 15  
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 20 25 30  
 Leu Tyr Leu Gly Cys Ala Lys Asp Ser Thr Asn Leu Asp Val Leu Glu  
 35 40 45  
 Glu Phe Gly Ile Lys Tyr Ile Leu Asn Val Thr Pro Asn Leu Pro Asn  
 50 55 60  
 Leu Phe Glu Asn Ala Gly Glu Phe Lys Tyr Lys Gln Ile Pro Ile Ser  
 65 70 75 80  
 Asp His Trp Ser Gln Asn Leu Ser Gln Phe Phe Pro Glu Ala Ile Ser  
 85 90 95  
 Phe Ile Asp Glu Ala Arg Gly Lys Asn Cys Gly Val Leu Val His Cys  
 100 105 110  
 Leu Ala Gly Ile Ser Arg Ser Val Thr Val Thr Val Ala Tyr Leu Met  
 115 120 125  
 Gln Lys Leu Asn Leu Ser Met Asn Asp Ala Tyr Asp Ile Val Lys Met  
 130 135 140  
 Lys Lys Ser Asn Ile Ser Pro Asn Phe Asn Phe Met Gly Gln Leu Leu  
 145 150 155 160  
 Asp Phe Glu Arg Thr Leu Gly Leu Ser Ser  
 165 170

<210> 16  
 <211> 168  
 <212> PRT  
 <213> Homo sapiens

<400> 16  
 Asp Arg Glu Leu Pro Ser Ser Ala Thr Glu Ser Asp Gly Ser Pro Val  
 1 5 10 15  
 Pro Ser Ser Gln Pro Ala Phe Pro Val Gln Ile Leu Pro Tyr Leu Tyr  
 20 25 30  
 Leu Gly Cys Ala Lys Asp Ser Thr Asn Leu Asp Val Leu Gly Lys Tyr  
 35 40 45  
 Gly Ile Lys Tyr Ile Leu Asn Val Thr Pro Asn Leu Pro Asn Ala Phe  
 50 55 60  
 Glu His Gly Gly Glu Phe Thr Tyr Lys Gln Ile Pro Ile Ser Asp His  
 65 70 75 80  
 Trp Ser Gln Asn Leu Ser Gln Phe Phe Pro Glu Ala Ile Ser Phe Ile  
 85 90 95  
 Asp Glu Ala Arg Ser Lys Lys Cys Gly Val Leu Val His Cys Leu Ala  
 100 105 110  
 Gly Ile Ser Arg Ser Val Thr Val Thr Val Ala Tyr Leu Met Gln Lys  
 115 120 125  
 Met Asn Leu Ser Leu Asn Asp Ala Tyr Asp Phe Val Lys Arg Lys Lys

130                      135                      140  
 Ser Asn Ile Ser Pro Asn Phe Asn Phe Met Gly Gln Leu Leu Asp Phe  
 145                      150                      155                      160  
 Glu Arg Thr Leu Gly Leu Ser Ser  
                     165

<210> 17  
 <211> 170  
 <212> PRT  
 <213> Homo sapiens

<400> 17  
 Gly Leu Cys Glu Gly Lys Pro Ala Ala Leu Leu Pro Met Ser Leu Ser  
 1                      5                      10                      15  
 Gln Pro Cys Leu Pro Val Pro Ser Val Gly Leu Thr Arg Ile Leu Pro  
                     20                      25                      30  
 His Leu Tyr Leu Gly Ser Gln Lys Asp Val Leu Asn Lys Asp Leu Met  
                     35                      40                      45  
 Thr Gln Asn Gly Ile Ser Tyr Val Leu Asn Ala Ser Asn Ser Cys Pro  
                     50                      55                      60  
 Lys Pro Asp Phe Ile Cys Glu Ser Arg Phe Met Arg Val Pro Ile Asn  
 65                      70                      75                      80  
 Asp Asn Tyr Cys Glu Lys Leu Leu Pro Trp Leu Asp Lys Ser Ile Glu  
                     85                      90                      95  
 Phe Ile Asp Lys Ala Lys Leu Ser Ser Cys Gln Val Ile Val His Cys  
                     100                      105                      110  
 Leu Ala Gly Ile Ser Arg Ser Ala Thr Ile Ala Ile Ala Tyr Ile Met  
                     115                      120                      125  
 Lys Thr Met Gly Met Ser Ser Asp Asp Ala Tyr Arg Phe Val Lys Asp  
                     130                      135                      140  
 Arg Arg Pro Ser Ile Ser Pro Asn Phe Asn Phe Leu Gly Gln Leu Leu  
 145                      150                      155                      160  
 Glu Tyr Glu Arg Thr Leu Lys Leu Leu Ala  
                     165                      170

<210> 18  
 <211> 168  
 <212> PRT  
 <213> Homo sapiens

<400> 18  
 Pro Ala Gln Ala Leu Pro Pro Ala Gly Ala Glu Asn Ser Asn Ser Asp  
 1                      5                      10                      15  
 Pro Arg Val Pro Ile Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro  
                     20                      25                      30  
 Tyr Leu Tyr Leu Gly Ser Cys Asn His Ser Ser Asp Leu Gln Gly Leu  
                     35                      40                      45  
 Gln Ala Cys Gly Ile Thr Ala Val Leu Asn Val Ser Ala Ser Cys Pro  
                     50                      55                      60  
 Asn His Phe Glu Gly Leu Phe His Tyr Lys Ser Ile Pro Val Glu Asp  
 65                      70                      75                      80  
 Asn Gln Met Val Glu Ile Ser Ala Trp Phe Gln Glu Ala Ile Ser Phe  
                     85                      90                      95  
 Ile Asp Ser Val Lys Asn Ser Gly Gly Arg Val Leu Val His Cys Gln

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      100              105              110
Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Ile Gln
      115              120              125
Ser His Arg Val Arg Leu Asp Glu Ala Phe Asp Phe Val Lys Gln Arg
      130              135              140
Arg Gly Val Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln
      145              150              155              160
Leu Glu Thr Gln Val Leu Cys His
      165

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<210> 19
<211> 169
<212> PRT
<213> Homo sapiens

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<400> 19
Pro Leu Ser Thr Ser Val Pro Asp Ser Ala Glu Ser Gly Cys Ser Ser
 1          5          10          15
Cys Ser Thr Pro Leu Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro
      20          25          30
Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ser Arg Lys Asp Met Leu
      35          40          45
Asp Ala Leu Gly Ile Thr Ala Leu Ile Asn Val Ser Ala Asn Cys Pro
      50          55          60
Asn His Phe Glu Gly His Tyr Gln Tyr Lys Ser Ile Pro Val Glu Asp
      65          70          75          80
Asn His Lys Ala Asp Ile Ser Ser Trp Phe Asn Glu Ala Ile Asp Phe
      85          90          95
Ile Asp Ser Ile Lys Asn Ala Gly Gly Arg Val Phe Val His Cys Gln
      100         105         110
Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Arg
      115         120         125
Thr Asn Arg Val Lys Leu Asp Glu Ala Phe Glu Phe Val Lys Gln Arg
      130         135         140
Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln
      145         150         155         160
Phe Glu Ser Gln Val Leu Ala Pro His
      165

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<210> 20
<211> 169
<212> PRT
<213> Homo sapiens

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<400> 20
Pro Val Pro Pro Ser Ala Thr Glu Pro Leu Asp Leu Gly Cys Ser Ser
 1          5          10          15
Cys Gly Thr Pro Leu His Asp Gln Gly Gly Pro Val Glu Ile Leu Pro
      20          25          30
Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ala Arg Arg Asp Met Leu
      35          40          45
Asp Ala Leu Gly Ile Thr Ala Leu Leu Asn Val Ser Ser Asp Cys Pro
      50          55          60
Asn His Phe Glu Gly His Tyr Gln Tyr Lys Cys Ile Pro Val Glu Asp

```



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65          70          75          80
Asn His Lys Ala Asp Ile Ser Ser Trp Phe Met Glu Ala Ile Glu Tyr
      85          90          95
Ile Asp Ala Val Lys Asp Cys Arg Gly Arg Val Leu Val His Cys Gln
      100         105         110
Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Met
      115         120         125
Lys Lys Arg Val Arg Leu Glu Ala Phe Glu Phe Val Lys Gln Arg
      130         135         140
Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln
145          150         155         160
Phe Glu Ser Gln Val Leu Ala Thr Ser
      165

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```

<210> 21
<211> 171
<212> PRT
<213> Homo sapiens

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<400> 21
Ser Glu Arg Ala Leu Ile Ser Gln Cys Gly Lys Pro Val Val Asn Val
1      5      10      15
Ser Tyr Arg Pro Ala Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro
      20      25      30
Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ser Lys Cys Glu Phe Leu
      35      40      45
Ala Asn Leu His Ile Thr Ala Leu Leu Asn Val Ser Arg Arg Thr Ser
      50      55      60
Glu Ala Cys Met Thr His Leu His Tyr Lys Trp Ile Pro Val Glu Asp
65          70          75          80
Ser His Thr Ala Asp Ile Ser Ser His Phe Gln Glu Ala Ile Asp Phe
      85          90          95
Ile Asp Cys Val Arg Glu Lys Gly Gly Lys Val Leu Val His Cys Glu
      100         105         110
Ala Gly Ile Ser Arg Ser Pro Thr Ile Cys Met Ala Tyr Leu Met Lys
      115         120         125
Thr Lys Gln Phe Arg Leu Lys Glu Ala Phe Asp Tyr Ile Lys Gln Arg
      130         135         140
Arg Ser Met Val Ser Pro Asn Phe Gly Phe Met Gly Gln Leu Leu Gln
145          150         155         160
Tyr Glu Ser Glu Ile Leu Pro Ser Thr Pro Asn
      165         170

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<210> 22
<211> 174
<212> PRT
<213> Homo sapiens

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<400> 22
Met Leu Glu Ala Pro Gly Pro Ser Asp Gly Cys Glu Leu Ser Asn Pro
1      5      10      15
Ser Ala Ser Arg Val Ser Cys Ala Gly Gln Met Leu Glu Val Gln Pro
      20      25      30
Gly Leu Tyr Phe Gly Gly Ala Ala Ala Val Ala Glu Pro Asp His Leu

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		35					40					45					
Arg	Glu	Ala	Gly	Ile	Thr	Ala	Val	Leu	Thr	Val	Asp	Ser	Glu	Glu	Pro		
	50					55					60						
Ser	Phe	Lys	Ala	Gly	Pro	Gly	Val	Glu	Asp	Leu	Trp	Arg	Leu	Phe	Val		
65					70					75					80		
Pro	Ala	Leu	Asp	Lys	Pro	Glu	Thr	Asp	Leu	Leu	Ser	His	Leu	Asp	Arg		
				85					90					95			
Cys	Val	Ala	Phe	Ile	Gly	Gln	Ala	Arg	Ala	Glu	Gly	Arg	Ser	Val	Leu		
			100					105					110				
Val	His	Cys	His	Ala	Gly	Val	Ser	Arg	Ser	Val	Ala	Ile	Ile	Thr	Ala		
		115					120					125					
Phe	Leu	Met	Lys	Thr	Asp	Gln	Leu	Pro	Phe	Glu	Lys	Ala	Tyr	Glu	Lys		
		130				135					140						
Leu	Gln	Ile	Leu	Lys	Pro	Glu	Ala	Lys	Met	Asn	Glu	Gly	Phe	Glu	Trp		
145					150					155					160		
Gln	Leu	Lys	Leu	Tyr	Gln	Ala	Met	Gly	Tyr	Glu	Val	Asp	Thr				
				165					170								